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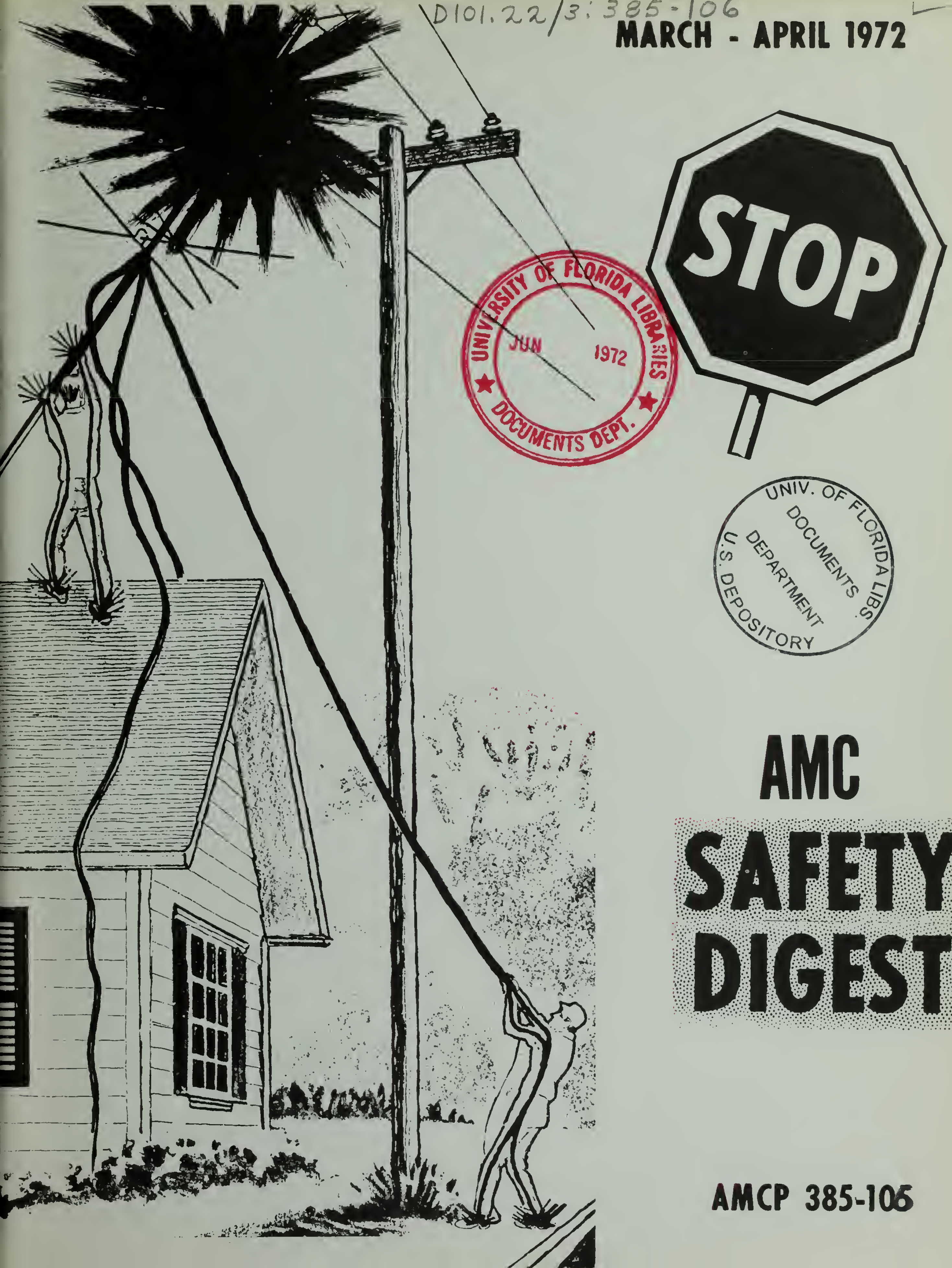

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AMC
SAFETY DIGEST

AMCP 385-106

NATIONAL SAFETY COUNCIL
CHICAGO

January 4, 1972

OFFICE OF THE PRESIDENT

Commanding General
United States Army Materiel Command
Washington, D. C. 20315

Dear General:

It is my pleasure to inform you that the National Safety Council Awards Committee, after reviewing the FY 1971 accident records of the United States Army Materiel Command, has approved an Award of Honor for the second consecutive time. The Award has been prepared and is being sent to your office.

You and all your staff are to be commended for this outstanding contribution to accident prevention. The Award of Honor is the Council's highest award.

The National Safety Council will be pleased to have the award presentation made by a senior staff member or by a member of the Board of Directors. Please let me know if you would like to have the Council participate in a presentation so that arrangements can be made.

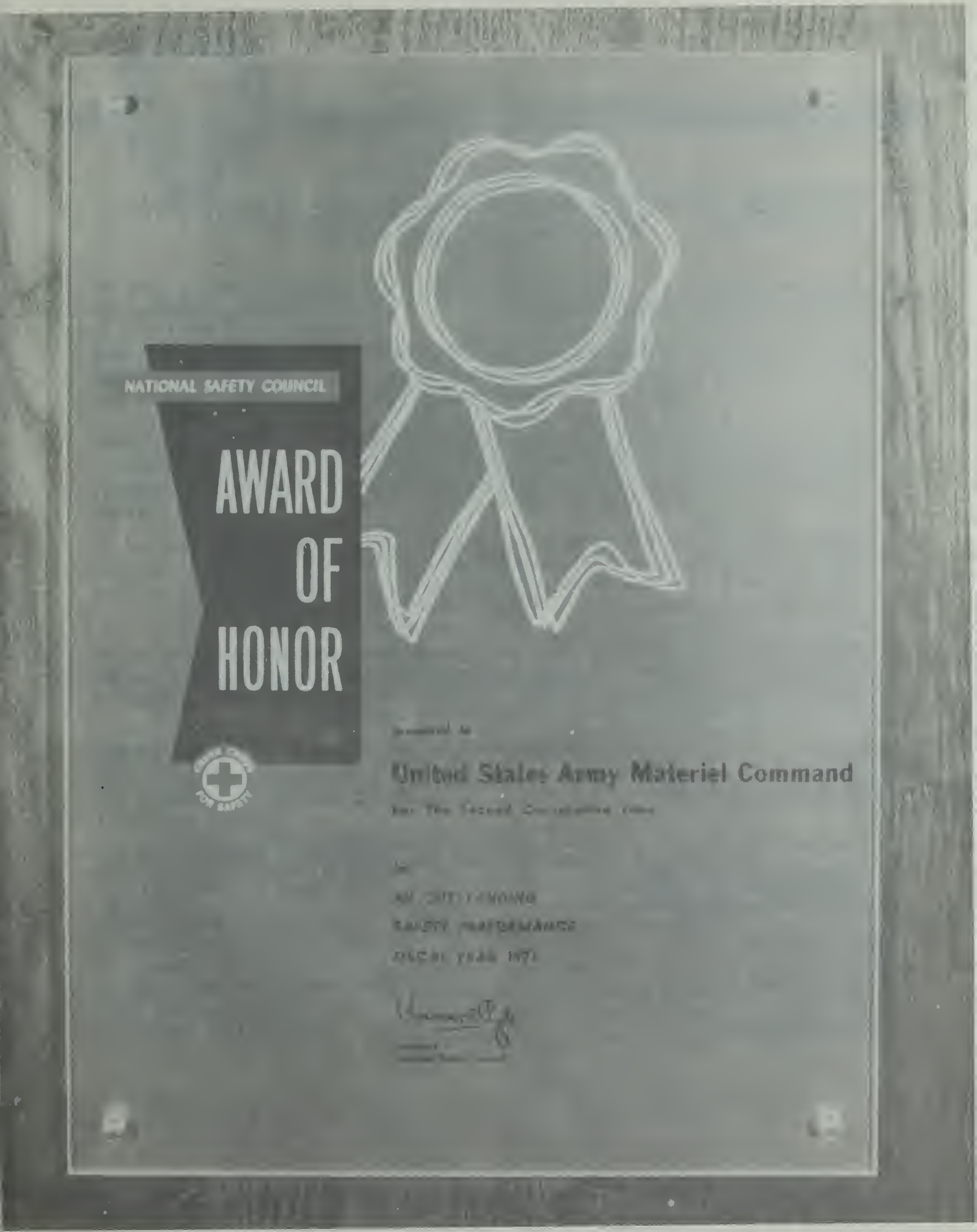
Congratulations on a continuing exceptional safety performance.

Sincerely,

Howard Pyle

Howard Pyle

HP:jh



NATIONAL SAFETY COUNCIL

AWARD
OF
HONOR

GREEN CROSS
FOR SAFETY

presented to

United States Army Materiel Command

for The Second Consecutive Year

for

AN OUTSTANDING
SAFETY PERFORMANCE
FISCAL YEAR 1971

HEADQUARTERS
UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, DC 20315

AMC PAMPHLET Number 385-105 MARCH-APRIL 1972

The Safety Digest is an AMC Pamphlet prepared by the Safety Office, Headquarters, US Army Materiel Command. Its purpose is to disseminate information which can materially influence and improve safety programs at all Command establishments.

Articles are included to supplement technical knowledge as well as practical knowledge gained through experience. They provide a basis for the further refinement of safety measures already incorporated in operating procedures and process layout. To achieve maximum effectiveness, the Safety Digest should be given widespread circulation at each AMC establishment.

Articles appearing in the Safety Digest are unclassified and are not copyrighted. They may be reproduced as desired in order to bring pertinent accident prevention information to the attention of all employees. The Army Materiel Command Safety Digest should be given a credit line when articles are extracted.

Unclassified material believed to be of interest or benefit to other establishments is welcome for publication in the Safety Digest. Please send articles for review to: US Army Materiel Command Field Safety Agency, Charlestown, Indiana. If possible, include pictures, charts, drawings, and illustrations that clarify and heighten interest in your presentation.

(AMCSF)

FOR THE COMMANDER:

OFFICIAL:

W. J. PHILLIPS
Colonel, GS
Chief, HQ Admin Mgt Ofc

CHARLES T. HORNER, JR
Major General, USA
Chief of Staff

Special Distribution

AMC SAFETY DIGEST

AMCP 385-105
MARCH-APRIL 1972

IN THIS ISSUE

US ARMY MATERIEL COMMAND WINS NSC AWARD OF HONOR .... Inside Front Cover
FOREWORD I
IN THIS ISSUE II
MOTIVATION--THE KEY TO OFF-THE-JOB SAFETY 1
HAZARD CLASSIFICATION 6
NEW ACCIDENT REVIEW POLICY ESTABLISHED BY CO, SACRAMENTO AD 8
SAFETY's ROLE IN POLLUTION ABATEMENT 9
TECOM INSTALLATIONS PRESENTED AMC SAFETY AWARDS 11
PICATINNY ARSENAL WINS NSC AWARD OF HONOR 11

CURRENT EVENTS

TRACTOR-MOWER FATALITY 12
FACULTY FOOTING ENDS IN FRACTURE 13
INSTANT REPLAY 13
WELDER BURNED BY INCENDIARY RESIDUE FLASH 14
HOSE SLIPPED, FINGERS NIPPED 14
ASPHALT TANK CAR ERUPTS 15
VOLUNTEER ARMY AMMO PLANT PRESENTED AMC AWARD OF HONOR FOR SAFETY 16
FRIENDS 17
TOWARD A SAFER ENVIRONMENT FOR MILITARY AIRCREWS 19
WHY NOT TRY? 22
THE TURBINE's 10 COMMANDMENTS 25

EXPLOSIVES SAFETY

WHO ARE THE STUDENTS? 26
RED RIVER ARMY DEPOT RECEIVES AMC AWARD OF HONOR FOR SAFETY 28
SAFETYVILLE 29
DO YOU KNOW? 31
THIOKOL, HUNTSVILLE DIVISION, WINS AMC AWARD OF HONOR FOR SAFETY 32
UNUSUAL FIRE PREVENTION EXHIBIT 33
WELL DID YOU KNOW? 34
REFERENCE PUBLICATIONS 35

MOTIVATION--THE KEY TO OFF-THE-JOB SAFETY

Off-the-job injuries to employees can seriously affect an installation's ability to successfully perform its mission. The loss of a worker from his job due to a Saturday night auto crack-up is a loss to Monday's production in the same manner as if the worker had been injured while on the job. In paragraph 1-24, AMCR 385-100, management is encouraged to cooperate in making their families aware of the importance of off-post safety.

In an effort to prevent on-the-job accidents, supervisors have several means of assuring safety, but off the job, they rarely exert any real control. The on-the-job safety program enables the worker to be matched to the job. The work environment is engineered and maintained in a safe condition. Safe operating procedures are established and their use is enforced. Also, accidents are investigated and steps are taken to eliminate the causes, thus preventing recurrences. But what control or influence does a supervisor have to assure his employees are safe while not at work? How can management influence an employee's behavior to aid in keeping him free from injury and ready for each day's production?

The "key" to off-the-job safety is motivation. Motivation is the key toward stimulating active interest, inducing participation, and impelling action. With proper motivation, an employee desires to be safe at home as well as at work. But how do we do it? How do we teach a man to be safe at work and motivate him to do the same at home when we have no control over his actions? How do we influence his behavior?

We have to communicate our ideas to him in a manner he will accept and believe. We must gain his attention and cause him to remember. He must see or hear the message and retain it for "instant replay" when it's needed. This leads us to the fundamental guidelines of motivation: (1) We must assure that the worker sees or hears the message; (2) we must assure he remembers it; and (3) we must assure he acts on it.

The methods of assuring that an employee will see or hear our off-the-job safety information depends on the media used to express our accident prevention ideas. The media recommended in paragraphs 1-17 and 1-24, AMCR 385-100, include: Bulletin boards, safety rules, handout cards, payroll inserts, booklets, pamphlets, posters, score boards, special exhibits, campaigns, contests, articles in local publications, sound slide films, or motion pictures.

Some thoughts on bringing the worker's attention to safety signs, displays, posters, exhibits, etc., are as follows:

1. The media should be of a size which is easily seen and read. Size might be utilized to get attention or arouse curiosity. Displays also might be designed to facilitate easy handling for transportation from one area to another.

2. The media should be changed often enough so as not to become overexposed and thus go unnoticed. It should, however, be allowed to remain long enough to assure that everyone has noticed it several times. The display, poster, etc., might then be rotated to another area.

3. The ideas expressed in the media must be kept simple and be easily recognized. Reading material should be short and to the point; if it is a display, poster, etc., the print should be large enough to be read at a distance.

4. The media must be located where it will be easily seen. Locations near punch clocks, stairway landings, elevators, lunchrooms, entranceways and foyers, etc., are effective. Displays and signs should generally be located at eye level and never over windows, vents, fire equipment, air ducts or similar equipment.

5. Lighting should be such that no glare, reflections or shadows make it difficult to see the display. Generally, it should be located in a well lighted area or be individually lighted.

6. A speaker or a recording must neither be so loud as to be offensive nor so low as to be unheard. Wording and ideas should be kept simple and easily understood. Repetition may be effective if not overdone.

7. Action speaks louder than words. Use people or, as an alternative, mannequins during safety presentations.

8. Color enhances both non-projected and projected visuals. Contrasting colors should always be used. Textured backgrounds and colored lighting lend a professional touch. Dramatic effects can be obtained with the high-visibility fluorescent paints, chalks and papers, especially if "black" light is used.

The method of assuring that an employee will understand and remember our off-the-job safety message depends on communication. We, attempting to transmit an idea, are communication senders. The media to transport our communication are directed toward the stimulation of one or more of the five senses. The worker, whom we hope to motivate, is the receiver of our safety message.

A fundamental requirement of effective communication is that we speak the receiver's language. If the off-the-job safety message is not tailored to the receiver, he may not receive the message at all or he may misinterpret it. We know that if a man understands only French, for example, he must be communicated with in that language. However, can we be certain that he will understand us when we attempt communication in his native language? Material presented to management personnel may not be as effective when presented to operators or scientific personnel. The message or media used must be tailored so the sender's ideas are presented in the receiver's language.

Effective communication is based solely upon that portion which the receiver receives. A sender may express all the information in the world to a receiver, but only what the receiver understands is effectively communicated. If a sender sends 2 + 2 = 4 and the receiver understands that 2 + 1 = 4, communication has occurred, but not with the desired result. How do we know our communication has been received as we intended? We know through "feedback."

Feedback is an interplay or exchange of ideas between the receiver and the sender. Two-way communication is more effective than one-way communication. It doesn't have to be a formal question and answer type thing. It may be just an informal "sounding" of what's been received -- what's understood -- what's remembered. It can be gleaned from everyday conversation, from informal questionnaires or perhaps group discussion. The sender must determine if the receiver is getting and understanding what is intended.

OK! So now we're ready to present our safety message in an eye-catching manner and in a language the receiver can understand, and we know to check through feedback to determine if the receiver does understand. But how can we assure action?

Actually there is no foolproof method for completely assuring that an employee will follow through with the action we have taught him. But, by appealing to him through those things which we do know activate his behavior, we can hope to motivate the desired action. The sender, receiver, action relationship is shown in Figure 1.

We know that people have a motive for everything they do. We also know from psychologists what forms of motivation are common to all people. Some of these forms of motivation or human interests are fear, pride, recognition, participation, competition and financial gain. Figure 2 illustrates methods of using these human interests as part of a motivational campaign to get employees to remember off-the-job safety messages and to act accordingly.

Motivation is a needed force in combating our personnel losses due to off-the-job accidents. To motivate people we need to communicate using a medium which is designed to stimulate interest. We must communicate in the employee's language and listen to his feedback to determine if he understands as we intend. We must relate our safety message to motivational factors which we know influence action. This motivation, if carried out, can successfully lead to the wanted action -- if only a stronger motivating force does not interfere.

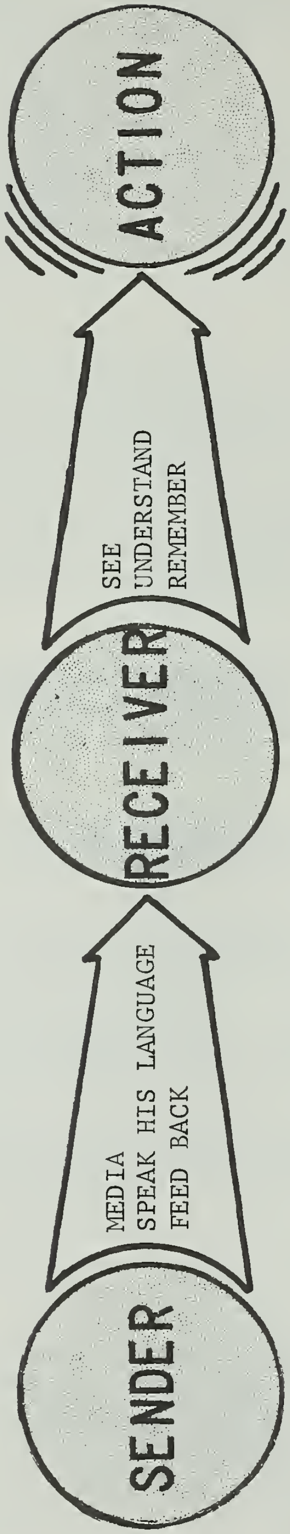

SENDER
MEDIA
SPEAK HIS LANGUAGE
FEED BACK
RECEIVER
SEE
UNDERSTAND
REMEMBER
ACTION

Figure 1

BASIC MOTIVATION FACTORS AND WAYS TO USE THOSE FACTORS

FEAR of painful injury, death, loss of income, family hardship, group disapproval or ridicule, supervisory criticism.	VISUAL MATERIAL: emotional or "shock" posters, dramatic films, pictures and reports of serious injuries on bulletin boards, in installation papers.
PRIDE in safe workmanship, in good records, both individual and groups.	RECOGNITION for individual and group achievement; trophies, personal awards, letters of appreciation.
RECOGNITION: desire for approval of others in group and family, for praise from supervisors.	PUBLICITY: photos and stories in installation and community papers, on bulletin boards.
PARTICIPATION: desire to be "one of the gang," "to get in the act."	GROUP & INDIVIDUAL ACTIVITIES: safety meetings, committees, safety stunts, campaigns.
COMPETITION: desire to win over others, such as shown in sports.	CONTESTS with attractive awards.
FINANCIAL GAIN: desire to become "better off," to make more money.	MONETARY AWARDS through an active award program, promotion, increased responsibility.

Figure 2

- National Safety Council, Accident Prevention Manual for Industrial Operations, 6th Ed., Page 168.

HAZARD CLASSIFICATION

System safety is primarily concerned with locating hazards before they become accidents. Hazard discovery can be greatly aided if a system is devised for classifying these undesired events.

MIL-STD-882 gives very general guidance establishing the scope of the safety engineering concept and outlines some basic hazard condition categories. They are intended to cover two broad areas; i.e., personnel and equipment safety, divided into four classes and defined as follows:

1. Category I -- Negligible: Conditions such that personnel error, environment, design characteristics, procedural deficiencies, or sub-system or component failure or malfunction *will not result in personnel injury or system damage*.

2. Category II -- Marginal: Conditions such that personnel error, environment, design characteristics, procedural deficiencies, or sub-system or component failure or malfunction *can be counteracted or controlled without injury to personnel or major system damage*.

3. Category III -- Critical: Conditions such that personnel error, environment, design characteristics, procedural deficiencies, or sub-system or component failure or malfunction *will cause personnel injury or major system damage, or will require immediate corrective action for personnel or system survival*.

4. Category IV -- Catastrophic: Conditions such that personnel error, environment, design characteristics, procedural deficiencies, or sub-system or component failure or malfunction *will cause death or severe injury to personnel, or system loss*.

Although the above hazard categories do provide valuable guidance, one must remember that these four classes are intended to be applicable to a wide variety of programs within the Department of Defense. Consequently, it is really not feasible to expect these terms to provide a useful service unless some effort is expended toward adapting them to a particular program. This adaptation should include definite transition points from one condition to the next in order to provide the user with a tool to measure the magnitude of his problems and allow him to know where to concentrate his effort.

In further defining these hazard levels, consideration should be given toward differentiating between "injury" and "severe injury" and between "damage" and "major damage." Also, specific definitions should be developed for terms such as "immediate," "failure" and "malfunction."

These definitions may be expressed in terms of cost, man-hours to repair, program delay or some other equally suitable unit.

With the hazard levels defined in this manner for each individual program, it then becomes possible to determine when an undesirable condition has been remedied so that it moves from, for example, a "critical" to a "marginal" or "negligible" level.

As an example of the manner in which this concept has been employed, the differentiation between damage and major damage for one Army system is shown below:

Minor damage is defined as that which results in one of the following:

1. System being inoperative less than 15 minutes.

2. Cost of repair less than 100 man-hours.

3. No down time.

4. Temporary operation outside the system specifications.

5. Field-repairable damage to equipment.

Major damage is defined as that which results in one of the following:

1. Program delay of more than one day.

2. Cost of repair more than 100 man-hours.

3. Permanent operation outside the system specifications.

4. Down time.

5. System being inoperative more than 15 minutes."

It should be noted that one is not bound by the hazard levels given in MIL-STD-882. For example, a slight modification of the "original" categories result in the following:

1. Category I -- Negligible: Condition(s) whereby damage to or loss of personnel, products or property will not occur.

2. Category II -- Marginal: Condition(s) whereby damage to or loss of personnel, products or property will occur unless preventive action is applied.

3. Category III -- Critical: Condition(s) whereby damage to or loss of personnel, products or property will occur unless preventive action is applied immediately.

4. Category IV -- Catastrophic: Condition(s) whereby damage to or loss of personnel, products or property will occur.

For this scheme, the following terms should be defined in accordance with the individual system requirements:

1. Damage.
2. Loss.
3. Personnel.
4. Products.
5. Property.
6. Immediately.

Regardless of what method is used, it should be fairly evident by now that hazard conditions are not categorized just to comply with a regulation or as a theoretical exercise. This process is one of the bases of the safety program and aids in deciding how much effort is wanted or needed so that attention may be directed accordingly.

*****

NEW ACCIDENT REVIEW POLICY ESTABLISHED BY CO, SACRAMENTO AD

In an effort to reduce accidents, CO, Sacramento Army Depot has established a unique and effective policy. He now personally interviews all principals when any of the following occur: Disabling injuries, minor injuries of a potentially serious nature, and property damages that reach or exceed $100 per accident.

Every Thursday morning the CO meets with involved employees, their supervisors, and the Safety Director in his office to discuss causes of the particular accident, and how the accident could have been prevented.

The effect of the policy upon the depot work force has been gratifying. Supervisors and subordinates alike have become noticeably more safety conscious, and are now making a definite effort to use the safe way to accomplish each task.

*****

SAFETY's ROLE IN POLLUTION ABATEMENT

There are many people from diversified and sundry disciplines and philosophies involved in the national movement to improve the quality of our natural environment through pollution abatement. The term, pollution, is an emotion-packed word to society today. For the purposes of this article, pollution is "the man-made contamination of soil, water, or atmosphere beyond that which is natural."

Among those interested in the control of environmental pollution are environmental engineers, medical and public health specialists, scientists, conservationists, and safety personnel. Safety Personnel?.....Yes, safety personnel should be participating in pollution abatement programs. Why? .....Because of his working relationship with both management and employees, the safety professional is in an excellent position for creating interest and obtaining the cooperation of those affected by pollution and those responsible for it. This article will briefly discuss safety's role in the AMC pollution abatement program.

A survey of current literature reveals many examples of how safety personnel have become involved in the control of environmental quality. Three such examples follow:

1. Air pollution: At a rural plant near an interstate highway, particulate matter emitted from the plant stack falls on a section of the highway. The material forms a slick surface making it hazardous to traffic.

2. Water pollution: The accidental discharge of a tank of plating solution, containing one and one-half tons of sodium cyanide industrial waste into a city sewer and to the river that was the source of water supply for a large community, jeopardized the lives of its residents.

3. Solid waste disposal: Explosive and chemical waste disposal is a problem facing many AMC installations and activities. While open burning is exempt from the laws and ordinances against open fires in many states, the obvious trend is to prohibit open fires of all types. Incineration is now one of the most popular means of disposal, but before this method will be generally accepted, the impact of the resulting compounds on the total environment, not just man, must be known.

There are scores of other examples which could be cited to clearly demonstrate the need for safety personnel participation in pollution abatement programs.

How is safety involved in the control of air and water pollution? Regulations require the Commanders of each AMC echelon to establish a Pollution Advisory Committee. Members of this committee will include:

the Post Engineer, the Chief of the Safety Office, the Chief of the Medical Office and other members as desired. The functions of the committee are outlined in AMCR 420-23, Control of Air and Water Pollution. These functions are outlined below:

1. Provide environmental pollution monitoring programs, investigate environmental pollution complaints from individuals or pollution abatement authorities, and exert every effort to resolve problems with these authorities.

2. Develop a phased, orderly plan and schedule for improving facilities that presently do not meet assigned pollution standards, including estimated costs of facilities improvement.

3. Maintain continuous surveillance of the installation activities, projects, and plans to prevent future sources of pollution.

4. Develop a training program for personnel involved in operations handling toxic materials, or operating facilities that would lead to environmental pollution problems resulting from ignorance, accidents, or carelessness.

The Pollution Advisory Committee is the key to safety's involvement in pollution abatement. The safety professional should work to help make the committee an alert, goal-oriented group. To do this he must keep well informed on the status of the problem and the potential solutions to it. Every safety officer and engineer should consider pollution abatement part of his professional responsibility and part of his social responsibility as a citizen.

*****

POISON PREVENTION WEEK

(March 19-25, 1972)

TECOM INSTALLATIONS PRESENTED AMC SAFETY AWARDS

Major General Frank M. Izenour presented AMC safety awards at TECOM Headquarters during the last TECOM commanders' conference.

COL John O. Mayhall, Commanding Officer, Jefferson Proving Ground (JPG), is shown accepting the AMC Award of Honor from MG Izenour, CG, TECOM. The award is for the best TECOM safety program during FY 1971. This is the fourth consecutive year that JPG has won the highest AMC safety award.

AMC awards of Merit were presented by General Izenour to Colonel Robert T. Blake, President, US Army Field Artillery Board, Ft. Sill, Oklahoma; and Lt. Colonel D. W. Alberti, Commanding Officer, US Army General Equipment Test Activity, Ft. Lee, Virginia.

Commendations for safety from AMC were presented to Colonel Peter E. Kelley, President, US Army Airborne, Communications and Electronics Board, Ft. Bragg, North Carolina; and Colonel Wallace O. Enderle, Commanding Officer, US Army Electronics Proving Ground, Ft. Huachuca, Arizona.

*****

PICATINNY ARSENAL WINS NSC AWARD OF HONOR

Picatinny Arsenal has won the NSC Award of Honor for operating 10,437,033 manhours without a disabling injury from 8 December 1970 to 5 November 1971. This is an exceptionally fine record. Personnel of Picatinny Arsenal are congratulated for their contributions to the Arsenal, AMC, and Army safety programs.

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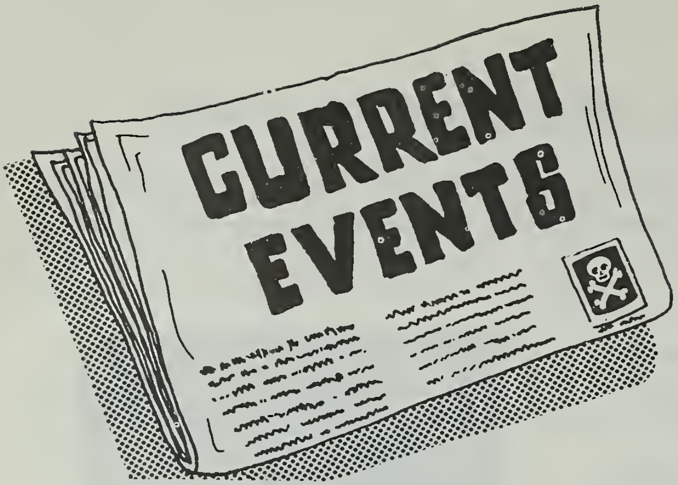
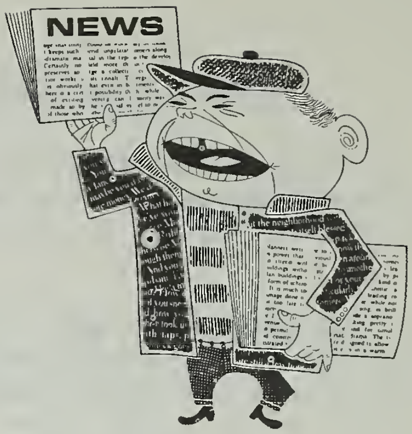




TRACTOR-MOWER FATALITY

Grass-cutting operations were being performed by contractor employees in an igloo area. Farm tractors equipped with roll bars and sickle mowers were being utilized.

A mower operator became suspicious when he failed to hear the tractor operating in the adjoining area. When he arrived at the adjacent work site, he found his co-worker lying on the ground approximately six feet to the rear of the overturned tractor. The latter employee died as a result of head injuries.

As there were no witnesses to the accident, reconstruction of the prevailing events was based on physical evidence at the scene. It appeared that the tractor had travelled approximately 40 feet up the side of the igloo toward the rear ventilator. The sickle cutter bar was in a vertical (non-cutting) position. Apparently, the tractor then rolled back down to the base of the igloo onto level surface and onward until the rear wheels dropped into a three-foot depression. There were no indications of braking or wheel slippage.

An eight-inch overhanging section of plywood forming a canopy on the roll bar was broken flush with the roll bar cross-section. The seat support was bent rearward. Investigation ended with a consensus of opinion that the tractor traveled backward at an undetermined speed, dropped its rear wheels into the drainage ditch, tipped rearward until the roll bar struck the ground breaking the plywood canopy and then fell forward onto the front wheels. It was also surmised that the sudden cessation of momentum threw the employee to the rear of the tractor.

The fatal injury might have been precluded had the worker worn the seat belt which was provided. In an effort to prevent further accidents of this nature, the installation issued more instruction regarding the requirement that tractor operators wear seat belts especially when operating over rough terrain.

FAULTY FOOTING ENDS IN FRACTURE

A forklift operator had moved a hopper containing deprimed 105mm cartridge cases from the building to the rear of a 1½-ton stake and platform truck. He parked the forklift approximately two feet behind the truck. A steady rain was falling.

Leaving the operator's seat, the worker climbed around the hoist frame onto the knife-like edge of the hopper. He placed his right foot on the edge of the truck bed and kept his left foot on the edge of the hopper. He then proceeded to remove the rear racks from the truck.

The first rack which was apparently binding gave way suddenly causing the worker to lose his footing and fall approximately four feet to the pavement. During the fall, the operator struck his back against the corner of the hopper. He suffered fractures of three ribs and the first, second and third lumbar vertebrae.

The circumstances surrounding the accident were given extensive publicity throughout the installation. Forklift operators were given re-instruction as to the hazards of taking unsafe positions and committing unsafe work practices during the course of their duties.

INSTANT REPLAY

Let's focus on the following flag football events through the magic of instant replay:

1. Pass receiver and defender collide and fall on each other. RESULT - receiver suffers kidney contusion and spleen rupture.

2. Two players collide while chasing a fumble. RESULT - one broken left leg.

3. Kickoff return specialist collides head-on with onrushing defensive man. RESULT - one broken clavicle.

4. Pass receiver collides with defender. RESULT - injury to right knee of receiver.

5. Defensive back collides with pass receiver. RESULT - receiver suffered sprain of left ankle and left knee.

The aforesaid replays involved enlisted men in all instances. These "accidents" are exemplary of the calculated risks taken during the performance of certain athletic events. Although these injuries cannot be equated with or compared to work injuries, they are a seasonal reality to be coped with.

WELDER BURNED BY INCENDIARY RESIDUE FLASH

An operating building used for the production of M-126 Incendiary Bomblets was shut down for maintenance. Subject bomblets are hexagonally shaped with cast magnesium bodies and thermate filler. They are initiated by a small arms primer and "First Fire 31 Mix."

Maintenance to be performed included cutting and welding in certain operating cubicles. These areas had been cleaned and approved for usage of flame-producing equipment the day before the accident occurred.

Two civilian employees were attempting to remove a conveyor roller by using an oxygen-acetylene cutting torch. A flash occurred when the torch was applied to the roller shaft between the roller and conveyor frame. One worker suffered first and second degree thermal burns on his face, neck and forehead. The other employee who was washing down the surrounding area was not injured.

Investigation revealed that the concave portion of the roller next to the conveyor frame had contained a build-up of thermate from line operations. The close tolerance between roller and frame had hindered clean-up operations.

In an immediate effort to prevent recurrence, the entire line was thoroughly cleaned and no torch-cutting operations were permitted until written clearances were received. Although all possible means of cleaning equipment have been exhausted, extra protective clothing and equipment consisting of leather welding jackets and wide-angle welding hoods are being worn by welders performing similar tasks.

Future corrective action includes the modification of subject conveyors to the extent that torch-cutting will no longer be required.

HOSE SLIPPED, FINGERS NIPPED

A machine tool operator was performing assigned duties on a milling machine. While working his initial piece of stock, the worker had to adjust the coolant hose which had slipped from its operating position.

Soon thereafter the hose slipped again and in trying to reposition it, the worker's left hand was caught between the moving cutter blades and the work piece. He suffered amputation of the little and ring fingers.

The operator in question had only two weeks of work experience at the installation although prior employment elsewhere had included four years of industrial machine shop work. No previous complaints had been issued in regard to loose coolant hoses.

All machine operators were reinstructed to not perform adjustments to machine parts while the machine is in operation. Coolant hoses will be arranged on the opposite side of the cutters, away from the possible point of contact.

ASPHALT TANK CAR ERUPTS

Two contractor employees and a commercial rail car inspector were burned by hot asphalt flowing out and over the open dome of a tank car. The car inspector and one contractor employee sustained serious disabling injuries from second degree burns. The other contractor employee, a supervisor, was treated for minor burns at the plant first-aid station.

Subject car was positioned at an asphalt off-loading facility and the car heat coils were connected to the plant steam system. This bond was accomplished by connecting the draw-off discharge pipe under the tank car to a 35 foot, steam-jacketed draw-off line.

A discharge valve, an integral part of the tank car piping system, was near the point where the steam-jacketed discharge line was connected to the tank car draw-off pipe. A second valve, which controlled the flow from the steam-jacketed discharge line to a surge tank at the asphalt handling facility, was in the closed position. It is assumed that this pipe connecting the tank car to the surge tank contained a quantity of asphalt.

The tank car discharge valve was controlled by a wheel located near the top of the tank car and a connecting shaft extending from the valve control wheel to the valve below. It had been reported to the supervisor and the railroad company that subject valve would not open.

Steam at approximately 100 psi was applied to the draw-off line in an effort to free the tank car discharge valve. The car inspector then decided to use two crowbars for leverage by inserting the bars in the spokes of the valve wheel. As the valve opened, hot asphalt erupted from the open dome of the tank car onto the men who slipped and fell to the ground level. Two of the men had solidified asphalt impacted in their mouths. It was wisely removed by the third worker as soon as possible and the injured were taken to a hospital for treatment of facial burns.

Facts gathered from post-accident investigation led to the assumption that the application of steam heat to the draw-off line created pressure to the extent that when the valve opened, a bubble of vapor, under pressure, pushed through the tank car causing the asphalt to erupt from the open dome.

Several changes in the off-loading operation have been implemented as a result of this accident.

1. Extending a platform with guard rails to provide more secure work area.

2. Opening of valve to surge tank before applying heat to draw-off line.

3. Providing a protective hood for head, face and upper body to be utilized by operator in off-loading tank cars.

4. Establishing a written procedure with stringent safeguards.

A survey of tank car off-loading may reveal similar conditions or other inadequacies which have accident potential. Tank car loading and off-loading facilities are usually located remote from other operations and are sometimes neglected by safety and management personnel. However, tank car operations have been the focal point of many accidents where workers have been sprayed by liquids under pressure, have fallen from cars or have been overcome by vapors.

*****

VOLUNTEER ARMY AMMO PLANT PRESENTED AMC AWARD OF HONOR FOR SAFETY

Volunteer Army Ammunition Plant (VAAP) was the recent recipient of an AMC Award of Honor for Safety for FY 1971. In the photo above, BG Peter G. Olenchuk (left), Commanding General, USA Ammunition Procurement and Supply Agency, is shown presenting the award plaque to LTC Edward J. Bourgeois, Commanding Officer, VAAP; and Mr. Norl Hamilton, Plant Manager, Atlas Chemical Industries, Inc., the operating-contractor.

FRIENDS

By Willie D. Wilson

Aviation Bell Plant Activity

CAST:

Johnny	Helicopter Pilot
Bill	Weather Forecaster
Ken	Operations Officer
Wade	Tower Operator
Ron	Operations Clerk
Ed	Commanding Officer

Operations Office at Jonesburg, small airfield of a training area in Germany.

Johnny on telephone ------------------- Weather Forecaster?????

Need weather from Jonesburg to Smith City.

Bill: Weather is marginal and we have no station at Jonesburg and nothing between there and Smith City, which is reporting 300' - ½ mile. What is your weather there?

Johnny: We have 300' - ½ also!

Bill: Are you trying to get home?

Johnny: Yes, and I have been here 5 days.

Bill: Since we have no reporting stations between you and Smith City, I'll give you en route weather minimums of 300' - ½ mile.

Johnny (completes flight plans and proceeds to the Operations Officer for clearance): How about clearing this so I can get home?

Ken (looking over the flight plan): Well, it looks OK, but the weather is barely at minimums; let me check with tower (reaches for the intercom). Tower, what is the weather?

Wade: I can barely make out the ½ mile marker; however, we can't determine the ceiling, and no one has been up this morning.

Ken: Thanks (turning to Johnny). Well, I'll call it 300' and clear your flight. However, if you should not have 300', you should return.

Johnny: (Feeling that nothing else stood in his way, walked briskly to the parked helicopter. After a quick preflight, he was off.) Tower, you have 300' here in the valley and it looks good toward home.

Wade: I'll open your flight plan at 0910 hours; have a nice flight (Maybe I should have wished him luck; it looks more like 150'.).

Ken: (Time 1130 hours) To Operations Clerk, still no closure on Johnny's flight plan. Check with flight service.

Operations Clerk: (after checking) No arrival at Smith City Sir!!

Ken: Keep checking and let me know.

Clerk (Time 1330 hours): Sir, flight service has confirmed an aircraft accident at Snowsville, one fatality.

Ken: Is is Johnny - y?

Clerk: Yes, Sir. Positive identification of aircraft number.

Ken: Get Johnny's Commanding Officer on the 'phone.

Clerk (handing the 'phone to Ken): Sir, the Commanding Officer on the 'phone.

Ken: Hello!! Ed, I am afraid I have bad news for you.

Ed: Yes. I am aware Johnny is over due.

Ken: It was fatal - sorry - Johnny was a wonderful man. He sure had a lot of friends!

Yes Johnny had a lot of Friends - Are you a friend of Johnny's???????

TOWARD A SAFER ENVIRONMENT FOR MILITARY AIRCREWS

By CPT Joseph P. Brown

Natick Laboratories

The United States Army Laboratories at Natick, Massachusetts, has worked incessantly to create a safer environment for military aircrew members. A primary effort has been made toward improvement of individual crew member protection from a flame and projectile environment.

The nomex flight suit is currently common issue to all services but in different versions. As could be predicted, each recipient prefers the version sported by another service - the Navy likes the Army two-piece and vice versa. Nomex material, a high temperature resistant nylon, will burn or char when exposed to very hot flame but will not support a flame unless soiled with combustible materials, i.e., starch or fuel. In general, thicker nomex cloth and wearing multiple layers of nomex provides more protection. In this respect the Army flight suit with its heavier material may be considered preferable. After years of abuse by crew members and laundering by wives and mama-sans, nomex may give slightly less protection. This isn't because any protection is "washed away" but because inadequate rinsing leaves residue in the fabric. There are many questions about nomex, particularly on modifications and improvements.

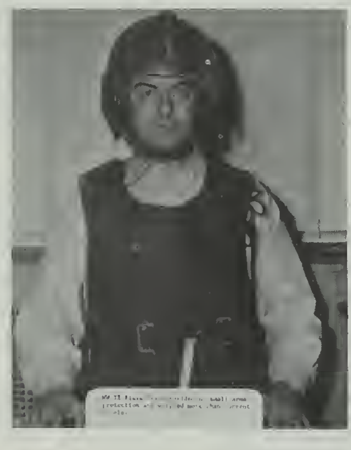
The specifications for the two-piece flight uniform are progressively incorporating needed design or material changes. Specifically, the procurement order for February 1972 will change the fly fastener on the pants from the zipper (too many malfunctions reported) to buttons. The breast pockets will be slanted and have zippers instead of buttons. A longer tail is designed for the shirt so it is less likely to become untucked exposing skin. These improved flight suits will be in the system in the spring and summer of this year. Future improvements may include using a more protective material.

A nomex repair kit is being studied; however, the guidance given in TM 10-8400-201-23 with Change 1 dated 13 October 1970 should prove adequate when repair is required. Regular issue patches will be continued as sew ons. Nomex underwear was field tested last year against underwear of a cotton/wool weave. The results are not compiled as yet.

The nomex aviator's jacket shown in the photo will be field tested this winter and a decision on production should be made by the fall of 1973. It is contemplated that the jacket will be produced in 9 sizes instead of the current 4 sizes and both the summer and winter jacket will be similar in appearance.

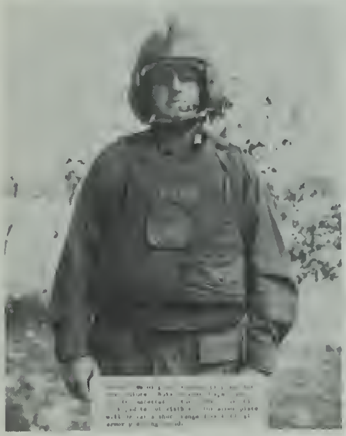
Future flight clothing design effort will continue the attempt to allow 10 seconds of protection in a flame atmosphere. A second generation flight suit may reach this goal and may be common to all services.

The evolution of aircrew member body armor parallels the advancement of flight clothing.



During World War II, air crew members primarily wore what was commonly known as a flak vest, which provided protection against fragments. This vest weighed approximately 22 pounds and was made of shingled metal plates in combination with fabric (photo). Small arms fire protection could not be provided primarily because the additional materials would be too heavy for a man to wear. In 1965, a material became available which for the first time offered the potential of providing a small arms fire protection at a weight which an air crew member could tolerate. This material was in the form of a ceramic-fiberglas composite, which, at the time, weighed approximately 12 pounds per square foot, half the weight of the previous materials. Various models of air crew member torso armor were developed using this new material. In 1966, in order to provide expedient protection to combat aircrew personnel operating in Southeast Asia, a small arms protective aircrew armor system for pilots and gunner/crew chief personnel was developed and furnished to Southeast Asia. The item consisted of ceramic-fiberglas rigid shaped torso front and back plates suspended in a cloth carrier with shoulder quick release features. Since this same material was also utilized for the sides, bottom and back of the pilot's seats, pilots wore this ensemble with only the front plate, and gunners crew chiefs wore it with front and back plates. Over 40,000 units were provided to SEA, which resulted in a reduction in air crew member casualties.

It became apparent through continued use of this item that major improvements could be made. As a result, a new chin neck pad weighing less than one ounce made of one and one-half pounds density polystyrene foam was developed which is attached to the top of the plate. This feature prevents or reduces injuries to the chin-neck area from contact with the armor plate in event of a crash or hard landing. Another development in material technology further reduces or eliminates spall emanating when a projectile is defeated by the armor. The additional spall suppression material and a knit shell for rear support will also be included in the new design. This modified vest (photo) to be worn by the pilot and co-pilot will weigh about 16½ pounds. The carrier and spall suppression material without the armor plate weighs 4 pounds. The vest worn by the crew chief will weigh about 34 pounds. The new vest should be finalized and in the system in a year.



The size and shape of the plates selected at the time and currently in use is not considered to be optimum. Intensive research to develop optimized anatomically shaped and sized plates was initiated in 1969. In order to optimize the shape, fit and comfort, a new anatomically shaped torso front and back armor in four sizes is being developed. At the present time, a new requirement has been established for the development of a combination air crewman armor and survival vest system. This system would provide the capability for air crew members to wear an armor front or armor front and back plate combined with a survival vest which can be either worn with or without the armor plate. It also would have features which allow for quick releasing of the armor plates without removal of the survival vest in the event of crash. Thus, this new item would incorporate all of the research and technological advances in design, lightweight armor materials and spall suppression. An engineering design test of this concept is scheduled during 1972 with the service test to be conducted in 1973, and type classification scheduled for 1974.

Continued on page 24

WHY NOT TRY?

By CPT John H. Morton

Aviation Bell Plant Activity

The following is a reminiscence (certainly not nostalgia) of a day in the life of a proud, young, extremely experienced Army aviator, 16 months removed from the warm secure nest of Mother Rucker. Whatever powers occasionally protect the young and foolhardy must certainly have been beaming benignly down upon him that day. However, these powers were surely taxed to their limits this particular day. If they had proven unequal to the task, doubtlessly this tale, with another ending, would have to be extracted from the rapidly filling memory banks of USABAAR's newly acquired computer. The names, of course, have been changed to protect the guilty but the places and events are all too real. It begins on a cold, wintry day at Fort Riley, Kansas .....

WO1 Hot Shot strolled merrily into Marshall Army Airfield operations. His spirits were soaring; even the bitter cold outside went unnoticed. Today he would be reprieved from his dreary, thankless duties as flight operations officer. Imagine wasting skill such as his shuffling endless pieces of paper from one basket to another across a desk. If only Army aviation would grow up!!!! How he suffered each time he had to schedule someone else for a flight which rightfully should belong to him. So what if flight records were months behind? Surely the importance of such things would eventually be cast aside to allow proper utilization of talent such as his.

Ah, but today escape had come in the form of an administrative flight to Scotts Bluff, Nebraska, some three hours' flight time each way in a Beaver. To top it off, he was to be called upon to provide an orientation ride en route for a newly assigned aviator. An ideal chance for this lucky young fellow to learn something.

Mr. Hot Shot was only slightly miffed to find that his co-pilot, WO1 New Guy, was already there studiously planning the flight. Oh, did he have a lot to learn! Wasn't take-off still 45 minutes away?

Hot Shot smiled understandingly at New Guy's inexperience and dutifully accompanied him to the weather office. Under his protective wing, New Guy would soon come around.

The forecaster's smile changed to a frown as he poured through his forecasts and sequence reports after being presented the flight plan. Scotts Bluff was forecasting freezing rain to begin about one hour prior to estimated arrival time. Hot Shot's spirits sunk as he stole a backward glance at his desk, piled high with flight records to be audited.

Wait! Hadn't this very forecaster been wrong just last month? Imagine forecasting rain on such a pretty day as that had been.

Hot Shot retrieved the 175 and briefing form and led New Guy from the room with a comradely arm about his shoulder.

"Look, New Guy, I know it doesn't sound the best, but this Kansas weather is among the most difficult in the country to predict. If we encounter bad weather, we can always come back. It's going to be clear all day here. We'd sure look foolish if that stuff never developed and we canceled out, wouldn't we? Whadda ya say, ol' buddy, WHY NOT TRY?"

New Guy, reflecting for a moment on Hot Shot's greater experience and not too keen on appearing over-cautious, reluctantly agreed.

Twenty miles south of Scotts Bluff the first drops of freezing rain stuck to the windshield. Hot Shot noted it with mild concern, but being only 20 miles out, surely they could make it.

In three more minutes, the windshield was completely obscured but inspection of the wings and struts showed only light accumulation. By this time, our hapless heroes were unable to maintain more than 500' AGL and still see the ground out the side windows. No problem there, as Hot Shot still had his trusty map.

The map blew out the window!!!!!!!

Was that a tower that just flashed by??

"Ahh, Uh, say, New Guy, I'm still positive we can make it to the field, but maybe just to keep from showing up all the civilian pilots at the field, we should turn back. Whadda ya say?"

The aircraft was already in a southbound turn. After filling the aircraft with fuel and themselves with several shaky cups of coffee at Goodland, Kansas, the pair filed and headed homeward.

At Salina, the first soft, floating flakes of snow were seen. Onl 40 miles to home. Twenty miles from home base, the visibility had dete orated to below ½ mile with a corresponding drop in ceiling.

GCA!!!!!

Upon being informed that Marshall was below minimums, Hot Shot calmly requested IFR clearance back to Salina. The reply stated that Salina was zero-zero as was almost every field within a 500-mile radius due to this unexpected blizzard. The request for the pilot's intention was greeted with silence.

A further transmission from the controller informed them that the weather had unexplainedly risen to precision minimums and later led to the sighting of the most gorgeous approach lights and runway that man had ever seen.

As Hot Shot walked away from that weary airborne beast of burden, he thought wistfully of his beautiful desk with those wonderful records, which, with any sort of luck at all, should take until spring to straighten out.

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Continued from page 21

Issued equipment like the body armor and pilots' helmets are accompanied by an owners' manual with a post card on the last page. All the owner has to do is to fill out the card as appropriate and drop it in the mail. However, very few are returned and this performance is disappointing to the researchers working to improve the equipment. Natick Laboratories is challenged to advance the state-of-the-art of aircraft safety. The fluidity of the field, combined with technological advance, will result in future increased margins of safety for aviation personnel.

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THE TURBINE's 10 COMMANDMENTS

NAVAL AVIATION SAFETY REVIEW
Approach Magazine
December 1971

EVER since Leonardo da Vinci started fooling around with sketches of helicopters and advancing the theory of rotary-wing flight, the one main deterrent to proving his theory was the lack of a suitable powerplant. Centuries after he died, the early fixed-wing and rotary-wing aircraft were still plagued by the same problem. However, with the advent of the thirties and forties, the reciprocating engine manufacturers began producing more reliable engines with more horsepower. Powerplant production next took a giant leap forward when the gas turbine proved feasible.

We have taken for granted that many of these turbines are rugged, reliable, and will operate trouble-free for thousands of hours. However, like any motor, they cannot be abused and still be expected to put out 100 percent. In order to give some good rule-of-thumb tips, the following Turbine 10 Commandments are listed.

1 - Thou shalt not actuate thy starter without first verifying that thy twist grip is in full cutoff position, lest thou melteth thy first stage turbine wheel.

2 - Thou shalt not roll thy twist grip to the lightoff position without ample oil pressure, lest thou condemn thy No. 8 bearing to eternal fire and overtemperature.

3 - Thou shalt not steal thy engine's remaining life by deliberate overtemperature operation.

4 - Thou shalt not covet more horsepower than thy engine is designed to give thee.

5 - Thou shalt honor thy TOT, Torque and N_1 Limits.

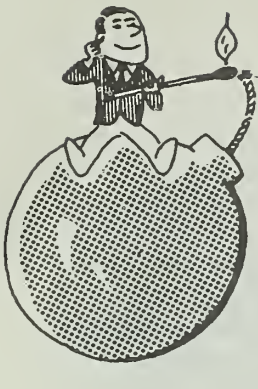
6 - Thou shalt hold no other factor in higher esteem than thy engine, lest when thou needest it most, it faileth thee.

7 - Thou shalt remember that, though thy engine complaineth not, its suffering from abuse is great.

8 - Thou shalt observe thy "dwell-time-at-idle" limits without fail.

9 - Thou shalt maintain thy engine to the very best of thy ability, lest thy negligence cost thy boss all his worldly goods.

10 - Thou shalt do unto thy engine as thou wouldst have thy engine do unto thee.



EXPLOSIVES SAFETY

WHO ARE THE STUDENTS?

Safety personnel have often heard the expression that "it is a wise man who takes advantage of 'lessons learned' from explosives accident experience in order to prevent recurrence of similar accidents." Headquarters, AMC issues abstract reports of all types of serious accidents to subordinate commands and installations. Such dissemination provides specific accident data; i.e., "lessons learned," which can be employed as accident prevention tools.

This teaching process sometimes suffers because people, who by job responsibility, should be learning from lessons that are created by the untimely accident experience of others, are failing to identify themselves as students.

The students might be any of the following categories of personnel:

1. The worker who needs to be informed of the hazards associated to his or her job.

2. The supervisor who should evaluate the performance of the worker.

3. The planner or engineer who is responsible for the correct technique.

4. The quality assurance and specifications personnel who determine the quality of the product.

5. The maintenance personnel, safety personnel and others who by experience and duties, should recognize the fact that they personally can benefit from the "lessons learned."

Points presented in the "lessons learned" may seem rather obscure to the extent that entire processes might require evaluation in order to establish the precise meaning of the lesson. Experience, however, is sometimes a hard teacher and the lesson may have to be taught several times before it is learned by the student.

Three explosive accidents that have occurred in a propellant manufacturing plant over a period of 18 years, graphically illustrate the premise that lessons are taught repeatedly until learned by the students. Single-base nitrocellulose propellants are considered as low pressure-type explosives, and normally, the greatest hazard of these is fire. Propellant and propellant dust, however, can be initiated resulting in explosions under certain conditions. A review of accident reports and abstracts, dating over a long period of time, indicates that single-base propellants have been involved in a high percentage of accidents in the history of the explosives industry.

The explosions in question occurred in 1954, 1970 and 1971 during barrel blending operations where newly manufactured single-base propellant was being pre-blended. The operation consisted of transporting the propellant by buggy into the preblend building (right), elevating the buggy to the top (third) floor, charging the barrel blender, tumbling the propellant for a specified duration, and discharging the contents of the barrel blender through a hopper into sacks which are removed from the building and taken to the next point of the process.

All three explosions occurred while the blender barrel was being charged. Property losses were extremely high (photo - left). The real tragedy, however, was that two workers were killed in each of the accidents and several disabling injuries were experienced.

Unfortunately, the recommendations that were made and implemented following the 1954 and 1970 accidents did not prevent the third explosion in 1971. The "students" had not learned the lesson being taught. Further research was necessary to prevent similar accidents.

The overall process of propellant manufacturing was carefully considered and it was determined that the pre-blending operation could be eliminated without degradation of product quality. In lieu of pre-blending, management controls have been implemented with successful results. Careful quality assurance monitoring of nitrocellulose batches and the selecting of bags of propellant from solvent recovery to be placed in water-dry operations have provided an adequate alternative.

To effect process changes such as the aforesaid demands a high degree of coordination and cooperation of everyone concerned. Management elements at all levels are interested in the results of such action, and decisions that are made must be made upon sound judgment. Since the accident investigations of all three explosions failed to reveal any specific causes, the solution to the problems presented in the lessons were not immediately evident. The lesson learned from the accident experience was that "the best way to prevent an accident is to eliminate the hazard."

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RED RIVER ARMY DEPOT RECEIVES AMC AWARD OF HONOR FOR SAFETY

MG James G. Kalergis (right), Deputy Commanding General for Logistics Support, AMC, is shown presenting a plaque for an AMC Award of Honor for Safety for FY 1971 to COL Frank P. Clarke, Commanding Officer, Red River Army Depot. The award is in recognition of the best safety program of those depots, installations and activities reporting directly to AMC Headquarters.

SAFETYVILLE

John S. Willis, Safety Division
Sperry Rand Corporation
Louisiana Army Ammunition Plant

Within the bounds of Louisiana Army Ammunition Plant lies a new community called "Safetyville." Creator of this very timely and important metropolis is J. S. Goins, Internal Traffic Manager. A sign near the street outside the Transportation Building advises those approaching that "You are now entering Safetyville, Home of Transportation -- Drive with Safety."

On display (right) inside the building are several photographs taken at the site of local accidents. There are no captions on the photographs; however, the employees have given appropriate names to most of them. Also displayed in the building are photographs of past and present safety leaders chosen each month from the transportation section. At the top of subject display (left) are two spaces reserved for photographs of the rail transportation and motor transportation employees of the year.

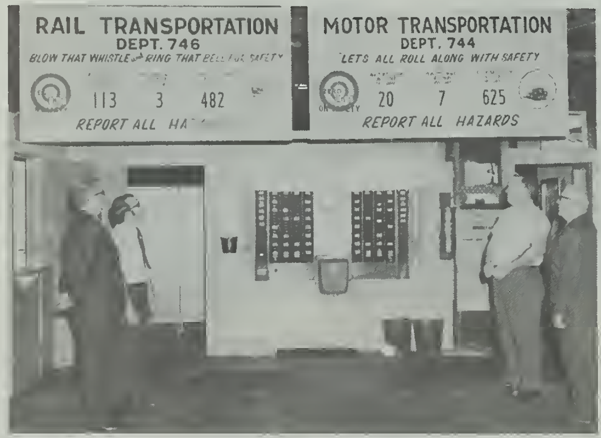
All transportation employees participate to some extent in the selection of the safety leaders. A committee of three is appointed by the yardmasters to nominate three employees for this post. These three names are submitted only after open discussion of this subject in the safety meeting, with all employees present. The final choice is made by the two yardmasters and the traffic manager who check and discuss the criteria for selection of the safety leader of the month. The employee chosen must have been satisfactory in all phases of safety and job performance. That employee must not be sub-marginal in any area such as attitude, attendance, security violations, debt violation or procedure violations. He must also have been free of disabling injuries both on and off the job during the period of consideration. The selection of the transportation employees of the year will be made in the same manner.

When an employee has been selected to be safety leader, a letter of congratulations is sent to that employee's wife. The letter states that the safety of employees at Louisiana Army Ammunition Plant continues to be the first consideration in the operation of our business, before everything else, and is desired at the expense of loss of production or any other phase of our operation. It also explains the criteria considered for the selection of the safety leader of the month.

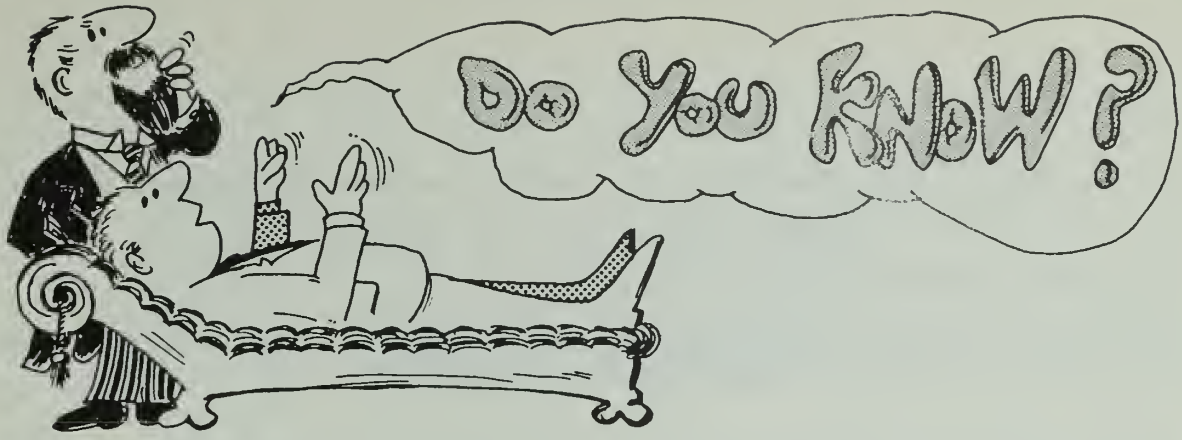
Another letter from Mr. Goins to the wives of all transportation employees relates the concern of Sperry Rand Corporation with accident prevention and safety. Reassurance is given the wife that our company is constantly trying to reduce these unfortunate incidents. He asks for her help in this effort with off-the-job safety.

To maintain the interest of transportation employees in their safety program, Mr. Goins plans new items to be added to the program. The next addition will probably be a small colorful pennant for the safety leader. This pennant would be displayed on the motor vehicle operated by the safety leader, or on the locomotive used by a train crew which includes the safety leader.

The safety program formulated by Mr. Goins and the transportation personnel is an excellent one. All employees are involved, recognition of a "job well done" is given deserving employees, and interest in the program is maintained. The program is producing desired results.



Above the time clock are two scoreboards showing pertinent safety statistics of rail and motor operations. This has stimulated competition in safety matters between rail and motor employees.



Here are ten questions that will test your knowledge of safety requirements that you will need under different circumstances. Answers to these questions may be found in the AMCR 385 series and the AMC supplements to the AR 385 series. How many can you answer without referring to the regulations?

1. Why is dry STB unsuitable to decontaminate spills of Group A chemical agent HD (mustard)?

2. What standard provides specifications for separations of landings or platform spaces on fixed ladders.

   Answer and reference:

3. Must railroad tracks be grounded on each side of high tension line crossings at installations where explosives, ammunition, or explosive mixtures are stored, handled, or processed?

   Answer and reference:

4. Must all personnel entering radioactive material areas during fire-fighting operations wear self-contained breathing apparatus?

   Answer and reference:

5. Is nitroglycerin more sensitive in the frozen or liquid state?

   Answer and reference:

6. What size and number of portable fire extinguishers are required to be carried when transporting explosives over public highways?

   Answer and reference:

7. Is the M13 protective kit to be carried and used for personal decontamination of mustard agent?

   Answer and reference:

8. Who will procure safety promotional material in addition to that provided by the U. S. Army Director of Safety?

   Answer and reference:

9. May AMC installations compete for non-Army safety awards?

   Answer and reference:

10. What clearance is required between overhead power transmission lines and explosives buildings?

    Answer and reference:

*****

THIOKOL, HUNTSVILLE DIVISION, WINS AMC AWARD OF HONOR FOR SAFETY

Thiokol Chemical Corporation, Huntsville Division, was the recipient of an AMC Award of Honor for Safety for FY 1971. In the photo above, MG E. I. Donley, Commanding General, U. S. Army Missile Command, is shown presenting the award plaque to Mr. John H. Goodloe, Thiokol's Vice-President and General Manager. Looking on are Mr. Robert Seavers (left), Safety Director, Redstone Arsenal Support Agency, and Mr. T. R. Gooch, Thiokol Manager of Safety.

UNUSUAL FIRE PREVENTION EXHIBIT

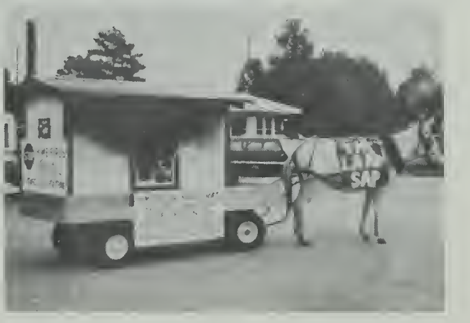
Chris D. Kneipp, Fire Department
Sperry Rand Corporation
Louisiana Army Ammunition Plant

The Louisiana Army Ammunition Plant Fire Department operates on the premise that a successful fire prevention program can only be attained through enthusiastic endeavors by the Department in conveying timely and interesting fire prevention programs to its people.

Fire prevention is a continuous theme of the Department. Efforts to educate the people and keep them constantly aware of fire hazards and the costs inflicted by fire mishaps are one of the primary goals of the LAAP Fire Department.

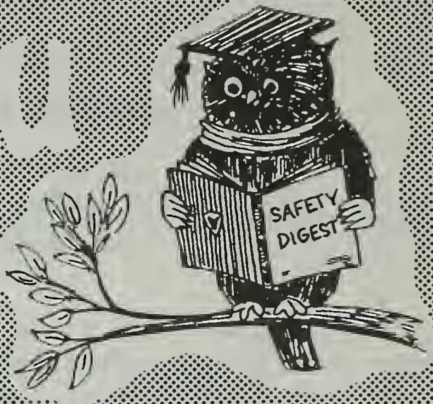
Assistant Fire Chief Glen Williams, aided by other plant workers, built an ingenious display to highlight the attentions devoted to "Fire Prevention Week." Chief Williams secured from plant surplus a four-wheel cart with an approximate size of 4' X 8'. On this cart was constructed a replica of a family dwelling made of wood and of proportionate size to the bed of the cart. A fire was "set" to the house and then extinguished at a point that would resemble a partially burned out family dwelling. Fire prevention signs were then painted and affixed to various locations around the display. To make the display more meaningful and to have it seen by the most people, the cart was modified to be drawn by a mule. The mule, belonging to one of the firemen, was then hitched to the display cart and was driven each day to a different area on the installation where a fire prevention program was being presented to employees by Fire Department personnel. Without question, the promotion was very effective based on the comments and conversation it created. The entire display represented no tangible costs.

A picture of the "LAAP SAP" hitched to the display is shown on the right. It is planned that this cart will be used in future mobile displays.



No program can be successful without the support of management and this is very true at LAAP. While LAAP is confident that they do have enthusiastic and successful programs, efforts to continue and improve are continuously explored.

WELL DID YOU KNOW?



Here are the answers to the questions on pages 31 and 32. A reference to the pertinent regulation and paragraph follows each answer.

1. Dry STB will not be used to decontaminate mustard due to the fire hazard potential caused by the heat generated during the chemical reaction. Reference: Paragraph 11-14a, Change 1, AMCR 385-100.

2. Fixed ladders shall conform to the latest edition of American National Standards Institute (ANSI) Safety Code for Fixed Ladders, A14.3. Reference: Paragraph 5-12, Change 1, AMCR 385-100. (Specifications for fixed ladder landing separations are no longer specified in AMCR 385-100.)

3. Yes. At installations where explosives, ammunition, or explosive mixtures are stored, handled, or processed, rails will be grounded at points 150 feet on each side of high tension line crossings. Reference: Paragraph 8-17, Change 1, AMCR 385-100.

4. Yes. Reference: Paragraph 12-36d, Change 1, AMCR 385-100.

5. Frozen nitroglycerin is less sensitive than the liquid compound; however, upon thawing, it may produce internal changes accompanied by sufficient evolution of heat to cause explosion. Reference: Paragraph 14-6b, Change 1, AMCR 385-100.

6. All trucks (Government and commercial) destined for off-post shipment of explosives over public highways shall be equipped with one Class 10BC rated portable fire extinguisher. Reference: Paragraph 22-5d, Change 1, AMCR 385-100.

7. No. Each man will carry a tube of M5 Protective Ointment in one of the pockets provided in the protective mask carrier when subject to possible mustard exposure. Apply M5 Protective Ointment to any contaminated areas. Reference: Paragraphs 11-10b and 11-12b(1)(g), Change 1, AMCR 385-100. (Requirement to carry and use the M13 kit is no longer specified in AMCR 385-100 for the treatment of mustard agent contamination.)

8. Safety promotional material, in addition to that provided by the U. S. Army Director of Safety, will be procured on both a monthly and an annual basis by the AMC Field Safety Agency. Safety promotional material and posters not available from the AMC Field Safety Agency, for which a requirement is properly justified, should be procured locally. Reference: Paragraphs 5a and 6, AMCR 385-8.

9. Yes. In consonance with Army policy, all AMC installations and activities are encouraged to compete for National Safety Council Awards, as well as any other non-Army safety awards. Reference: Paragraph 4f, AMCR 385-5.

10. Primary and secondary overhead power transmission lines in explosives areas shall not be located closer to buildings containing explosives than the height of the pole carrying the lines, but in no case closer than 50 feet. Reference: Paragraph 6-10, AMCR 385-100.

*****

REFERENCE PUBLICATIONS

AR 385-14 9 Dec 71	Safety - Accident/Incident Report--Shipments of Conventional Explosives and Dangerous Articles by Commercial Carriers
AR 385-41, Ch 1 28 Oct 71	Safety - U. S. Army Accident Codebook
TB MED 286 5 Nov 71	Medical Service - Prevention of Electrical Shock in Hospitals
TM 9-1330-200 17 Sep 71	Grenades, Hand and Rifle
AMCR 385-100, Ch 1 14 Oct 71	Safety - AMC Safety Manual

UNIVERSITY OF FLORIDA
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FLARE

USE

COLOR

TO

LIGHTEN

YOUR

SAFETY

PROBLEM